



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/521,742

05/10/2005

Martin Honsberg-Riedl

1454.1593

7027

21171 7590 04/24/2008

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

BAISA, JOSELITO SASIS

ART UNIT

PAPER NUMBER

2832

MAIL DATE

DELIVERY MODE

04/24/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/521,742	Applicant(s) HONSBURG-RIEDL ET AL.	
	Examiner JOSELITO BAISA	Art Unit 2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23 is/are allowed.
- 6) ☐ Claim(s) 24-36 and 38-44 is/are rejected.
- 7) ☒ Claim(s) 37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 24, 25, 27-29, 34-36 and 38-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Ito et al. [5719546].

Ito discloses at least one wire winding (2, 4); at least one core (1, 3) formed of a ferromagnetic core material, the core having gaps (6) therein to interrupt the magnetic circuit, each space gap that interrupts the magnetic circuit having a gap width within the range of 2.0 mm to 10.0 mm [Col. 4, Lines 12-26, Figure 1].

With respect to claim 41, the claim is a method counterpart of structure of claim 24 above and this method steps therefore are inherent for manufacturing a transformer.

Regarding claim 25, Ito discloses the core comprises at least two core parts (1, 3), which are opposed to each other across the gaps 6 and are separated from each other by the gap widths [Col. 4, Lines 12-26, Figure 1].

Regarding claim 27, Ito discloses the gaps 6 all have an essentially equal gap width [Col. 4, Lines 20-25, Figure 1].

Art Unit: 2832

Regarding claim 28, Ito discloses the wire windings (2, 4) define an inner region and an outer region, and the gaps 6 of the core (1, 3) are positioned in the inner region [Col. 4, Lines 6-11, Figure 1].

Regarding claim 29, Ito discloses the core (1, 3) is essentially symmetrical [Col. 3, Lines 59-60, Figure 1].

Regarding claim 34, Ito discloses the component is a transformer [Abstract].

Regarding claims 35, 36, and 38-40, Ito discloses wire windings (2, 4) coated with film (5, 6) which can be in the form of resin or silicon rubber being in thermally conductive contact with the wire windings. Sheet 6 contains thermally conductive fillers like soft magnetic particles. Resin 5 serves as thermally conductive material between the windings and the thermally conductive sheet 6. Core 1, 3 itself serve as the heat sink.

Regarding claims 42, 43 and 44 the recitation of duty cycle and voltage ranges of AC voltage, they cannot be relied upon to distinguish over the combined references because they are seen as intended use (i.e., when the claim is directed to a circuit device, any recitation concerning the input or output signal of such circuit device or environment in which the circuit device is employed is not part of the inventive circuit device). Only structural and functional limitations are given patentable weight.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. in view of Jin et al. [6512, 437].

Ito discloses the instant claimed invention discussed above except for at least one gap is an air gap.

Jin discloses at least one of the gap is an air gap [Col. 1, Lines 35-55, Figure 1].

It would have been obvious to one having ordinary skill in the art at the time of the invention to use an air gap in magnetic cores as taught by Jin to the core of Ito.

The motivation would have been for improve core saturation and better transmission efficiency [Col. 1, Lines 35-50].

Regarding claim 30, Jin discloses core formed of a material that can withstand high frequencies [Col. 2, Lines 1-5].

Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito in view of Nakayama et al. [6593839].

Ito discloses the instant claimed invention discussed above except for the wire winding comprises a high-frequency braided wire.

Nakayama discloses the wire winding comprises a high-frequency braided wire having a multiplicity of individual wires that are electrically insulated from one another [Col. 4, Lines 18-30, Figure 9].

It would have been obvious to one having ordinary skill in the art at the time of the invention to use wire winding comprises a high-frequency braided wire as taught by Nakayama to the transformer of Ito.

The motivation would have been to reduce variation of inductance values of the strands thus improving efficiency of transformer [Col. 2, Lines 19-40].

Regarding claim 32, Nakayama discloses the individual wires have an individual wire diameter of 80 μm [Col. 4, Lines 18-30].

Nakayama discloses the claimed invention except for the claimed diameter of the wire within the range of 10 μm and 50 μm . It would have been obvious to one of ordinary skill in the art at the time the invention was made to alter the wire diameter since applicant has not disclosed that a diameter within the range of 10 μm and 50 μm solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the wire diameter as shown by Nakayama.

Nakayama further disclose the intention of reducing winding (resistance) loss in high frequency operation of inductor [Col. 2, Lines 19-40].

Regarding claim 33, Nakayama further discloses the wire winding is formed from 5 to 100 individual wires [Col. 4, Lines 18-30].

Allowable Subject Matter

Claim 23 is allowed.

Claim 23 recites, inter alia, *cooling device to cool wire winding, the cooling device comprising: a film formed of a first polymer-thermally conductive filler composite material, the film being in thermally conductive contact with the wire winding; and a casting compound formed of a second polymer-thermally conductive filler composite material different from the first polymer-thermally conductive filler composite material, the casting compound being in thermally conductive contact with the heat sink.*

Claim 37 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reason for allowable subject matter:

Claim 37 recites, inter alia, *cooling device to cool wire winding, the cooling device comprising: a film formed of a first polymer-thermally conductive filler composite material, the film being in thermally conductive contact with the wire winding; and a casting compound formed of a second polymer-thermally conductive filler composite material different from the first polymer-thermally conductive filler composite material, the casting compound being in thermally conductive contact with the heat sink. .*

The references of record do not teach or suggest the aforementioned limitation, would it be obvious to modify those references to include such limitation.

Response to Argument

Applicant's arguments with respect to claims 24-44 have been considered but are moot in view of the new ground(s) of rejection.

Ito discloses at least one coil; at least one core formed of a ferromagnetic core material, the core having gaps therein to interrupt the magnetic circuit, each space gap that interrupts the magnetic circuit having a gap width within the range of 2.0 mm to 10 mm.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joselito Baisa whose telephone number is (571) 272-7132. The examiner can normally be reached on M-F 5:30 am to 2:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2832

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elvin G Enad/
Supervisory Patent Examiner, Art Unit 2832

Joselito Baisa
Examiner
Art Unit 2832

/J. B./
Examiner, Art Unit 2832